

Pneumonia

- **Definition:**
 - Inflammation of the lungs affecting the lung air sacs (Alveoli) usually caused by an infection.
- **Epidemiology:**
 - Affects 450 million a year.
 - Community acquired Pneumonia (CAP) in adults is 5.16 to 6.11 cases per 1000 persons per year.
 - Out of the top 10 killers in the world, pneumonia is the only infection.
- **Types:**
 - Community Acquired pneumonia (CAP):
 - Typical (Lobar consolidation on CXR).
 - Atypical (Diffuse reticulonodular infiltrates).
 - Hospital Acquired pneumonia (HAP):
 - Develops at least 48-72 hours after admission.
- **Causes:**

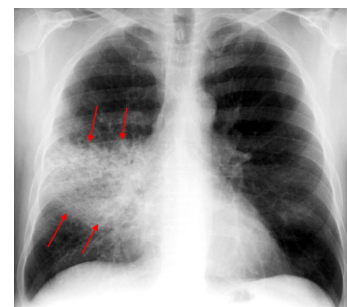


Figure 1: Lobar Pneumonia CXR.

Type		Organism	Notes
Typical	Lobar	Streptococcus Pneumonia	Most common Cause
		Klebsiella Pneumonia	Alcoholics
	Bronchopneumonia	Haemophilus Influenza	COPD patients
		Staphylococcus aureus	Recent viral influenza
		Pseudomonas auroginosa	Cystic fibrosis patients
Atypical		Mycoplasma Pneumoniae	Young healthy (college students, Military)
		Respiratory syncytial virus	Most common cause of atypical pneumonia in children
		Legionella	Contaminated water, air conditioning
		Cytomegalovirus	Immunosuppressive patients
		Chlamydia	Hoarseness
		Coxiella burnetti	Close contact with animals (Veterinarians, Farmers)


- **Signs and Symptoms:**

- **Typical CAP:**

- Fever
- Productive cough
- Chest pain
- Dyspnea
- Tachycardia, tachypnea

- **Atypical CAP:**

- Headache
- Dry cough
- Fever
- Pulse-temperature dissociation (normal pulse with high fever)

Pathogen	Presentation
Klebsiella Pneumonia	Hemoptysis. "Current jelly" sputum
Mycoplasma Pneumoniae	Dry cough, Bullos myringitis
Legionella	GI symptoms, CNS symptoms
Pneumocystis	AIDS with <200 CD4 cells 

- **Diagnosis:**

- **Chest X-ray:**

- **Best initial test.**
- Only way to differ pneumonia from acute bronchitis (same presentation).

- **Sputum culture:**

- **Most accurate test for pneumonia.**
- Has to be done before treatment.

- **Specific organism tests:**

- Legionella → Urine Ag.
- Mycoplasma → Cold Agglutination.
- Pneumocystis → Bronchoalveolar lavage (BAL).

- **Treatment:** the biggest decision to make is to whether admit the patient or not. The decision is made based on the severity of the disease not the etiology.

- **Outpatient treatment (CAP):**

- Younger than 60 years → **Macrolides is the first line treatment.**
 - ✓ Fluoroquinolones is the alternative.
- Older patients or with comorbidities → **Fluoroquinolones.**

- **In-patient (CAP):** Fluoroquinolones alone or Macrolide + third generation cephalosporin.

CURB65=
Admission (>2)

- Confusion
- Uremia
- Respiratory distress
- Low BP
- Age > 65

- **Treatment of HAP (Any of the following 3):**
 1. Cephalosprin that covers pseudomonas.
 2. Carbepenems.
 3. Piperacillin/Tazobactam.

✓ Note: Macrolides are not used.

- **Complications:**

- Pleural effusion.
- Empyema.
 - ✓ Both respond most rapidly to *chest tube or thoracostomy*.

- **Vaccination:**

- Indications for pneumococcal vaccine:

- Everyone above the age of 65 Y/O (single dose).
- If the 1st dose was before the age of 65 or immunocompromised, give a booster dose after 5 years from the 1st dose.
- Pre-existing pulmonary disease.
- Cochlear implants.
- CSF leaks.
- Alcoholics.
- Smokers.

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5. Med-ed.virginia.edu,. 'Chest Radiology'. N.p., 2015. Web. 3 Nov. 2015. (Figure1).

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